What is claimed is:

1. A method of generating a manufacturing process for producing at least one assembly, said method comprising the steps of:

designing at least one assembly to be produced comprising at least two components to be engaged to one another such that the area where the components are to be engaged thereby defines at least one contact area;

generating a representation of the assembly;

assigning a unique identifier to each individual component of the assembly or, when a group of more than one identical components is utilized in the assembly, assigning identical unique identifiers to each component of the group thereby identifying each component as identical;

assigning a manufacturing methodology to at least one contact area; and

generating manufacturing instructions for the manufacturing process based at least in part on the identifier and the contact areas.

2. The method of claim 1 further comprising assigning a manufacturing methodology to each identifier.

3. The method of claim 2, wherein at least one computer system is utilized to execute at least one step of the method.

4. The method of claim 3, wherein the computer system directs a computer numerical controlled device.

5. The method of claim 2 further comprising designing the assembly on a computer system remote from a manufacturer facility thereby allowing a remote user to design an

assembly independent from the manufacturer facility.

6. The method of claim 5 further comprising shipping the assembly to a user of the remote computer system.

7. The method of claim 1 further comprising predicting manufacturing costs for varying product designs and monitoring manufacturing cost predictions of varying product designs.

8. The method of claim 1 further comprising modifying the manufacturing instructions generated by modifying the manufacturing methodology assigned to the identifier, the contact area or both the identifiers and contact area and regenerating the manufacturing instructions.

9. The method of claim 2 further comprising reporting to a user one or more design defects between the individual components of the assembly and the assigned manufacturing methodologies of at least one contact area based at least in part on the manufacturing methodologies of the contact area and the identifier for the components.

10. The method of claim 9, wherein the identifier comprises at least one of the group consisting of a three-dimensional representation, an alphanumeric identifier, the shape of the component, the material of the component, the numerical identifier, an alphabetical identifier, the size of the component, and any other physical property of the component.

11. The method of claim 1, wherein the identifier comprises at least one of the group consisting of a three-dimensional representation, an alphanumeric identifier, the shape of the component, the material of the component, the numerical identifier, an alphabetical identifier, the size of the component and any other physical property of the

component.

12. The method of claim 1, wherein the representation of the assembly is generated using at least one of the group consisting of computer-aided drafting software, a writing surface and a writing device, and an Internet web-site.

13. The method of claim 2 further comprising producing the assembly utilizing the manufacturing instructions.

14. The method of claim 13 further comprising using at least one computer system utilizing at least a portion of the manufacturing instructions to direct at least one machine used to produce the assembly.

15. The method of claim 2, wherein the identifiers for two components and their contact area each define a property key and the property keys for the assembly are utilized to achieve at least one result chosen from the group consisting of:

defining a type of manufacturing process best suited for the assembly;
determining a most probable efficient use of manufacturing facilities;
determining a resource required to produce the assembly;
directing manufacturing devices; and
directing human resources utilized in the manufacture of the assembly.

16. The method of claim 2, wherein manufacturing instructions are generated for more than one assembly.

17. The method of claim 16 further comprising using manufacturing instructions for each assembly to achieve at least one result chosen from the group consisting of:

defining a type of manufacturing process best suited for the assembly;
determining a most proable efficient use of manufacturing facilities;

determining a resource required to produce the assembly;
directing manufacturing devices; and
directing human resources utilized in the manufacture of the assembly.

18. The method of claim 16, wherein the identifiers for two components and their contact area define a property key and the property keys for each assembly are utilized to achieve at least one result chosen from the group consisting of:
defining a type of manufacturing process best suited for the assembly;
determining a most probable efficient use of manufacturing facilities;
determining a resource required to produce the assembly;
directing manufacturing devices; and
directing human resources utilized in the manufacture of the assembly.

19. The method of claim 1, wherein the manufacturing instructions comprise one or more tasks.

20. The method of claim 19, wherein one or more tasks are performed by a first manufacturing device.

21. The method of claim 20, wherein a manufacturing instruction generating computer system comprising a processor and memory directs the first manufacturing device to perform at least one task defined at least in part by the manufacturing instructions.

22. The method of claim 22, wherein the manufacturing instruction generating computer system is remote from the first manufacturing device.

23. The method of claim 22, wherein the instruction generating computer system and the first manufacturing device are connected by a network.

24. The method of claim 23, wherein the network comprises a global computer network.

25. The method of claim 24, wherein a design computer system is utilized to design the assembly.

26. The method of claim 25, wherein the design computer system is also the instruction generating computer system.

27. The method of claim 25, wherein the design computer system is remote from the instruction generating computer system.

28. The method of claim 21, wherein the first manufacturing device notifies the instruction generating computer system when the task the instruction computer system directed it to perform has been completed.

29. The method of claim 21, wherein the first manufacturing device directs a second manufacturing device to perform at least one task defined at least in part by the manufacturing instructions.

30. The method of claim 21, wherein the first manufacturing device notifies a production control computer system when the task the instruction generating computer system directed it to perform has been completed, and the production control computer system further directs a second manufacturing device to perform a task defined at least in part by the manufacturing instructions.

31. The method of claim 19, wherein at least one production control system computer receives at least one task and directs at least one manufacturing device to perform the task.

32. The method of claim 31, wherein production control system notifies a human when human interaction is necessary to complete the task.

33. The method of claim 31, wherein the instruction generating computer system is remote from the production control computer system.

34. The method of claim 33, wherein a design computer system is utilized to design the assembly and the design computer system is remote from the production control computer system and the instruction generating computer system.

35. The method of claim 31, wherein a design computer system is utilized to design the assembly and the design computer assembly is remote from the production control computer system.

36. A method of generating a manufacturing process for producing at least one assembly, the method comprising the steps of:

providing at least one assembly design to be produced comprising at least two components to be engaged to one another such that the area where the components are to be engaged thereby defines at least one contact area;

assigning a unique identifier to each individual component of the assembly or, when a group of more than one identical component is utilized in the assembly assigning identical unique identifiers to each component of the group thereby identifying each component of the group, thereby identifying each component as identical;

assigning a manufacturing methodology to at least one contact area; and

generating manufacturing instructions for the manufacturing process based upon at least in part on the identifier and the contact areas.

37. The method of claim 36 further comprising assigning a manufacturing methodology to

each identifier.

38. The method of claim 36, wherein at least one method executing computer system is utilized to execute at least one step of the method.

39. The method of claim 37, wherein at least one method executing computer system is utilized to execute at least one step of the method.

40. The method of claim 36 further comprising the step of designing at least one assembly.

41. The method of claim 38 further comprising the step of designing at least one assembly.

42. The method of claim 40, wherein a design computer system remote from the method executing computer system is utilized to design the assembly.

43. The method of claim 42 further comprising the step of generating a representation of the assembly.

44. The method of claim 43, wherein the representation comprises a three-dimensional representation.

45. The method of claim 41 further comprising the step of generating a representation of the assembly.

46. The method of claim 45, wherein the representation comprises a three-dimensional representation.

47. A computer system comprising a processor, a memory subsystem coupled to the processor, wherein the memory subsystem stores code that when executed causes the

processor to perform the steps of:

providing at least one assembly design to be produced comprising at least two components to be engaged to one another such that the area where the components are to be engaged thereby defines at least one contact area;

assigning a unique identifier to each individual component of the assembly or, when a group of more than one identical component is utilized in the assembly assigning identical unique identifiers to each component of the group thereby identifying each component of the group, thereby identifying each component as identical;

assigning a manufacturing methodology to at least one contact area; and

generating manufacturing instructions for the manufacturing process based upon at least in part on the identifier and the contact areas.

48. The computer system of claim 47, wherein the steps further comprise assigning a manufacturing methodology to each identifier.

49. The computer system of claim 48, wherein the steps further comprise designing at least one assembly.

50. The computer system of claim 47, wherein the steps further comprise designing at least one assembly.

51. The computer system of claim 48, wherein the steps further comprise generating a representation of the assembly.

52. The computer system of claim 49, wherein the steps further comprise generating a representation of the assembly.

53, The computer system of claim 47, wherein the steps further comprise modifying the manufacturing instructions generated by modifying the manufacturing methodology assigned to the identifier, the contact area or both the identifier and contact area and regenerating the manufacturing instructions.

54. The computer system of claim 53, wherein the steps further comprise reporting to a user any design defects between the individual components of the assembly and the assigned manufacturing methodologies of at least one contact area based at least in part on the manufacturing methodologies of the contact area and the identifier for the components.

55. The computer system of claim 54, wherein the identifier comprises at least one of the group consisting of a three-dimensional representation, an alphanumeric identifier, the shape of the component, the material of the component, the numerical identifier, an alphabetical identifier, the size of the component, and any other physical property of the component.

56. The computer system of claim 47, wherein the identifier comprises at least one of the group consisting of a three-dimensional representation, an alphanumeric identifier, the shape of the component, the material of the component, the numerical identifier, an alphabetical identifier, the size of the component and any other physical property of the component.

57. The computer system of claim 48, wherein the identifiers for two components and their contact area each define a property key and the property keys for the assembly are utilized to achieve at least one result chosen from the group consisting of:

defining a type of manufacturing process best suited for the assembly;

determining the most efficient use of manufacturing facilities;

determining the resource required to produce the assembly;

directing manufacturing devices; and

directing human resources utilized in the manufacture of the assembly.

58. The computer system of claim 47, wherein manufacturing instructions are generated for more than one assembly.

59. A computer system comprising a processor, a memory subsystem coupled to the processor, wherein the memory subsystem stores code that when executed causes the processor to perform the steps of:

designing at least one assembly to be produced comprising at least two components to be engaged to one another such that the area where the component are to be engaged thereby defines at least one contact area;

generating a representation of the assembly;

assigning a unique identifier to each individual component of the assembly or, when a group of more than one identical components is utilized in the assembly, assigning identical unique identifiers to each component of the group thereby identifying each component as identical;

assigning a manufacturing methodology to at least one contact area; and

generating manufacturing instructions for the manufacturing process based at least in part on the identifier and the contact areas.

60. The computer system of claim 59, wherein the steps further comprising assigning a manufacturing methodology to each identifier.

61. The computer system of claim 60, wherein the steps further comprise modifying the manufacturing instructions generated by modifying the manufacturing methodology assigned to the identifier, the contact area or both the identifiers and contact area and regenerating the manufacturing instructions.

62. The computer system of claim 59, wherein the steps further comprise reporting to a user any design defects between the individual components of the assembly and the assigned manufacturing methodologies of at least one contact area based at least in part on the manufacturing methodologies of the contact area and the identifier for the components.

63. The computer system of claim 60, wherein the identifier comprises at least one of the group consisting of a three-dimensional representation, an alphanumeric identifier, the shape of the component, the material of the component, the numerical identifier, an alphabetical identifier, the size of the component, and any other physical property of the component.

64. The computer system of claim 59, wherein the identifier comprises at least one of the group consisting of a three-dimensional representation, an alphanumeric identifier, the shape of the component, the material of the component, the numerical identifier, an alphabetical identifier, the size of the component and any other physical property of the component.

65. The computer system of claim 59, wherein the identifiers for two components and their contact area each define a property key and the property keys for the assembly are utilized to achieve at least one result chosen from the group consisting of:

defining a type of manufacturing process best suited for the assembly;
determining the most efficient use of manufacturing facilities;
determining the resource required to produce the assembly;
directing manufacturing devices; and
directing human resources utilized in the manufacture of the assembly.

66. The computer system of claim 59, wherein manufacturing instructions are generated for more than one assembly.

67. A computer system comprising a processor, a memory subsystem coupled to the processor, wherein the memory subsystem stores code that when executed causes the processor to perform the steps of:

designing at least one assembly to be produced comprising at least two components to be engaged to one another such that the area where the components are to be engaged thereby defines at least one contact area;

generating a representation of the assembly;

assigning a unique identifier to each individual component of the assembly or, when a group of more than one identical components is utilized in the assembly, assigning identical unique identifiers to each component of the group thereby identifying each component as identical;

assigning a manufacturing methodology to at least one contact area; and

generating manufacturing instructions for the manufacturing process based at least in part on the identifier and the contact areas.